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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---------------------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/616,542 | 07/10/2003 | William D. Buchanan | AVI 1010-02US | 2814 |
| 28327 | 7590 | 02/10/2005 | EXAMINER | |
| THE LAW OFFICE OF JOHN A. GRIECCI 703 PIER AVE., SUITE B #657 HERMOSA BEACH, CA 90254 | | | | SQUIRES, BRETT S |
| ART UNIT | | PAPER NUMBER | | |
| 2836 | | | | |

DATE MAILED: 02/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | |
|------------------------------|------------------|-----------------|
| Office Action Summary | Application No. | Applicant(s) |
| | 10/616,542 | BUCHANAN ET AL. |
| | Examiner | Art Unit |
| | Brett S. Squires | 2836 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 10 July 2003.
- 2a) This action is FINAL. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-32 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 03/11/2004 is/are: a) accepted or b) objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

1. The formal drawings and declaration filed on March 11, 2004 have been received by the examiner.

Drawings

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: "the primary power port" reference number 107 is not labeled in figures 3A and 4. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the

applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4, 7-9, 14-15, and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Smith (US 2002/0157931).

Smith discloses a circuit breaker lockout apparatus having primary power port characterized by a power rating and configured to receive power from an AC utility (“power feed lines” figure 8 ref# 14 and paragraphs 29-31), a plurality of secondary power ports configured to distribute power from the primary power port to the plurality of loads, each secondary power port being characterized by a power rating where the sum of the secondary power ports power rating establishes an aggregate output power rating (“individual circuits” and “circuit breakers” figure 1 ref# 17-20 and figure 3 ref# 30-32 and paragraphs 29-31), a system controller circuit configured to regulate the power distributed by at least one secondary power port of the plurality of secondary power ports such that the power received from the power source does not exceed a designed

power limit (“circuit breakers” figure 3 ref# 30-32 and paragraphs 29-31), where the aggregate output power rating can exceed the designed power limit (paragraphs 29-31).

Regarding Claim 9:

Smith discloses that various sizes of double throw switches and circuit breakers can be connected to the power feed lines (paragraphs 4-5 and 29-31).

Regarding Claims 14-15:

The circuit breakers allow current to pass through them bidirectionally and only trip when the magnitude of the current is greater than the current rating of the circuit breaker.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4,6,14-18,20,22, and 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Gilbert (US 6,357,011).

Gilbert discloses a bus-powered computer peripheral with supplement battery power to overcome bus-power limit having a primary power port configured to receive

power from the power source ("USB Port" figure 1 ref# 28), a plurality of secondary power ports configured to distribute power from the primary power port to the plurality of loads ("the connections between the voltage regulator and the batteries and the connection between the voltage regulator and the primary function module" figures 1-2, col. 3 lines 10-20, and col. 4 lines 1-12), each secondary power port being characterized by a power rating (col. 3 lines 10-20 and batteries have power rating such as 1.5 volts for 2080 mAh) where the sum of the secondary power port power ratings establishes an aggregate output power rating (sum of the battery power ratings and the primary function module power rating), a system controller circuit configured to regulate the power distributed by at least one secondary power port of the plurality of secondary ports such that the power received from the power source does not exceed a designated power limit ("interface-controller module" figures 1-2 ref# 44, col. 1 lines 54-67, col. 2 lines 1-10, col. 3 lines 10-41, 65-67, and col. 4 lines 1-12), where the aggregate power rating can exceed the designated power rating (col. 1 lines 11-67, col. 2 lines 1-10, and col. 3 lines 10-20).

Regarding Claims 3-4: See column 2 lines 36-59.

Regarding Claim 6: See column 3 lines 10-41, 65-67, and col. 4 lines 1-12.

Regarding Claim 14:

Gilbert discloses the rechargeable batteries can receive power and distribute power (col. 3 lines 31-50).

Regarding Claim 15:

Gilbert discloses the computer can communicate bidirectionally with the peripheral device (col. 3 lines 10-41, 65-67, and col. 4 lines 1-12).

Regarding Claim 16-17: See column 1 lines 54-67, column 2 lines 1-10, column 3 lines 10-41, 65-67, and column 4 lines 1-12.

Regarding Claim 18: See column 2 lines 35-46.

Regarding Claims 23:

Gilbert discloses a voltage regulator configured to regulate power drawn by the batteries (figures 1-2 ref# 46), and a controller configured to transmit command signals appropriate to direct the voltage regulator of the batteries to regulate the power drawn by the batteries (figures 1-2 ref# 44, col. 1 lines 54-67, col. 2 lines 1-10, col. 3 lines 10-41, 65-67, and col. 4 lines 1-12).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5-6 and 10-15 are rejected under 35 U.S.C. 103(a) as being obvious over Smith (US 20020157931) and Carson (US 6,842,668).

Smith discloses the above stated circuit breaker lockout apparatus with aggregate power rating exceeding the primary power rating, but does not disclose a system controller configured to transmit command signal appropriate to direct load controllers to regulate power drawn by the loads and the system controller is configured such that the designated power limit varies in accordance with an external signal.

Carson discloses a remotely accessible power controller for building lighting having a power controller for load shedding, selectively turning off and/or dimming load in response to command signal transmitted from utility providers, (figure 4 ref# 10 and col. 5 lines 54-67 and col. 6 lines 1-54).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Smith to include a power controller such as that disclosed by Carson in order to automatically disconnect or reduce loads in accordance with specified power consumption limits.

Regarding Claim 14-15:

Carson discloses communication signals travel bidirectionally between the power controller and the utility provider and the power controller and the loads connected to the power controller (col. 5 lines 54-67 and col. 6 lines 1-54).

10. Claims are 16, 21, and 22 rejected under 35 U.S.C. 103(a) as being obvious over Smith (US 20020157931) and Appelberg (US 2001/0040798).

Smith discloses the above stated circuit breaker lockout apparatus with aggregate power rating exceeding the primary power rating, but does not disclose a dedicated battery where the control system is further configured to distribute power from the dedicated battery to at least one secondary power port of the plurality of secondary power ports.

Appelberg discloses a distributed emergency lighting system having self-testing and diagnostic capabilities having a battery backup (paragraph 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified Smith to include a battery backup such as that disclosed by Appelberg in order to power the system in the event of a power failure.

Regarding Claim 21:

The above stated combination of Smith and Appelberg discloses the claimed invention except for the use of a battery without a battery charger. It would have been obvious to one of ordinary skill in the art at the time the invention was made to remove the battery charger, since it has been held that omission of an element and its function

in a combination where the remaining elements perform the same function as before involves only routine skill in the art. In re Karlson, 136 USPQ 184.

11. Claim 19 is rejected under 35 U.S.C. 103(a) as being obvious over Gilbert (US 6,357,011) and Hunter (US 5,724,237).

Gilbert discloses a voltage regulator (figures 1-2 ref# 46) for controlling the distribution of power from the batteries and a controller (figures 1-2 ref# 44) configured to provide power limit commands that control the operation of the DC to DC converter in order to regulate the power distributed by the batteries, but does not disclose the voltage regulator includes a DC to DC converter.

Hunter discloses a DC to DC converter for powering a load (figure 1 ref# 15,16 and abstract).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have modified to Gilbert to include a DC to DC converter such as that disclosed by Hunter in order to allow the voltage regulator to rechargeable batteries with voltage ratings other than 5 volts, this allows the user to use commonly available batteries.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being obvious over Gilbert (US 6,357,011).

Gilbert discloses the claimed invention except for the use of a battery without a battery charger. It would have been obvious to one of ordinary skill in the art at the time

the invention was made to remove the battery charger, since it has been held that omission of an element and its function in a combination where the remaining elements perform the same function as before involves only routine skill in the art. *In re Karlson*, 136 USPQ 184.

12. Claims 24-32 are rejected under 35 U.S.C. 103(a) as being obvious over Tseng (5,631,536) and McKenzie (6,003,139) and Henze (5,926,004).

Tseng discloses a plurality of battery ports, each battery port being configured to electrically connect to at least one of the plurality of batteries, a utility port configured to electrically connect to the utility, and to provide power from the utility to the plurality of battery ports (col. 4 lines 42-44), a system controller configured to control the power distribution between the utility port and the plurality of battery ports, wherein the controller controls the power distribution such that the plurality of batteries are charged using power from the utility (col. 4 lines 44-49), but does not disclose a utility at a power level not exceeding the maximum power level and a first charging module, including a first power converter connecting to the first battery port, a second power converter connecting to the second battery port, a crossover switch switchably connecting the first power converter to the second battery port, and a module controller configured to control the operation of the crossover switch and establish the power distribution between the first and second battery ports.

McKenzie discloses the power level of the output power is controlled so that it does not exceed a maximum power level which is based on the level of the control signal (figure 1, col. 3 lines 40-67, and col. 4, lines 1- 7).

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Tseng to include a power level not exceeding the maximum power level as taught by McKenzie in order to limit the output power and preventing permanent damage to the power supply circuit.

Henze discloses a first charging module, including a first power converter connecting to the first battery port, a second power converter connecting to the second battery port, a crossover switch switchably connecting the first power converter to the second battery port, and a module controller configured to control the operation of the crossover switch and establish the power distribution between the first and second battery ports (figure 4 and col. 2 lines 51-63).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have further modified the above stated combination of Tseng and McKenzie to include a first power converter connecting to the first battery port, a second power converter connecting to the second battery port, a crossover switch switchably connecting the first power converter to the second battery port, and a module controller configured to control the operation of the crossover switch and establish the power distribution between the first and second battery ports such as that taught by

Henze for the purpose of limiting the output power and preventing permanent damage to the power supply circuit.

Regarding Claim 24:

McKenzie shows the utility port is configured to receive power from utilities at a plurality of power levels (col. 4 lines 33-35).

Regarding Claim 26:

Henze shows the first power converter of the first charging module connects to the first battery port through a first connecting switch of the first charging module; the second power converter of the first charging module connects to the second battery port through a second connecting switch of the first charging module; and the module controller of the first charging module is configured to control the operation of the first and second connecting switches and establish the power distribution between the first and second battery ports (col. 3 lines 49-60).

Regarding Claim 27:

Henze shows the first charging module is configured to receive DC power from the utility port; the first power converter of the first charging module is a DC-DC power converter; and the second power converter of the first charging module is a DC-DC power converter (col. 4 lines 1-7).

Regarding Claim 28:

Henze shows the module controller for the first charging module is separate from the system controller, and wherein the system controller and the module controller for the first charging module communicate to determine the operation of the crossover switch and the first and second connecting switches (col. 6 lines 24-32).

Regarding Claim 29:

Henze shows a first power converter connecting to the third battery port; a second power converter connecting to the fourth battery port, a first switch switchably connecting the first power converter to the fourth battery port; and a module controller configured to control the operation of the first switch and establish the power distribution between the first and second battery ports (col. 6 lines 22-38).

Regarding Claim 30:

Henze shows the utility port is configured to provide DC power to each of the charging modules via a distribution bus; the first power converter of the first charging module is a DC-DC power converter; the second power converter of the first charging module is a DC-DC power converter; the first power converter of the second charging module is a DC-DC power converter; and the second power converter of the second charging module is a DC-DC power converter (col. 4 lines 10-13).

Regarding Claim 31:

Henze shows an AC rectifier configured to receive AC current from the utility port and configured to provide DC current to the distribution bus (col. 4 lines 6-13).

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to the applicant's disclosure. Additional prior art of interest includes but is not limited to the following US Patents and Publications, Foreign Patents and Publications and Non-patent Literature: Suzuki (US 5,874,823) discloses a controlled battery charger for charging multiple batteries.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brett S. Squires whose telephone number is (571)272-2268. The examiner can normally be reached on 9am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on (571)272-2058. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

